

REMARKS

After entry of the present Amendment, claims 1-12 remain pending in the application. Claim 1 is in independent form. Claim 12 has been amended to merely clarify grammar. No new claims or new matter has been added through the present Amendment.

Claims 1-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Zhu (United States Patent No. 6,509,423) in view of Miyajima et al. (United States Patent Application Publication No. 2002/0015748). The Applicants respectfully traverse this rejection on the basis that the Examiner has not established a *prima facie* case of obviousness. In view of the original independent claim 1 and the amendment to claim 12 to merely clarify grammar, the Applicants respectfully traverse the rejections over Zhu in view of Miyajima et al. and submit that the present claims are both novel and non-obvious over the prior art.

To summarize the relevant standards that the Examiner must apply in performing an obviousness analysis of the present claims, 35 U.S.C. §103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007). As the Examiner is aware, the question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). See also *KSR Int’l*

Co. v. Teleflex Inc., 127 S.Ct. at 1734, 82 USPQ2d at 1391. Further, the MPEP provides seven examples of rationales for establishing a *prima facie* case of obviousness. Should the Examiner utilize any other methodology to establish obviousness, a commensurate level of specificity is required.

The Applicants respectfully submit that the Examiner's position relative to obviousness of independent claim 1 over the combination of Zhu in view of Miyajima et al. is deficient and violates the standards for establishing a *prima facie* case of obviousness set forth by *Graham*. Notably, the combination of Zhu and Miyajima et al. fails to teach each and every element of independent claim 1 of the present application. As the Examiner is aware, under *Graham* factual determination (1), the Examiner "must first obtain a thorough understanding of the invention disclosed and claimed in the application under examination by reading the specification, including the claims, to understand what the applicant has invented." See MPEP §§ 904 and 2141.II.A. Fundamentally, to establish a *prima facie* case of obviousness of a claim, the references, after combination, must teach or suggest all the claim limitations. See MPEP 2143. The Applicants respectfully submit that the Examiner has misinterpreted the teachings of Zhu.

In particular, the Applicants respectfully assert that, even assuming proper combination of Zhu and Miyajima et al., such combination still does not teach or suggest every claim element of independent claim 1; component (B) of the present invention is not taught by the asserted combination. More specifically, with respect to independent claim 1, the Examiner

states in comment 5 of the present Office Action that “Zhu discloses a curable silicone composition comprising the following:

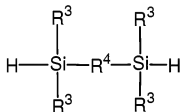
(A) an organopolysiloxane having at least two alkenyl groups per molecule (col. 4, lines 30-50);

(B) an organopolysiloxane having at least two silicon-bonded hydrogen atoms per molecule (col. 5, line 55 – col. 7, line 25);

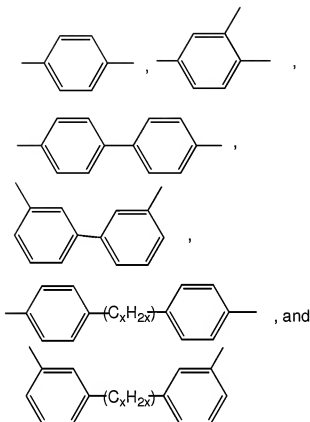
(C) a platinum-type catalyst (col. 9, lines 3-12); and

(D) a filler (col. 7, lines 26-32). . .”

The Applicants respectfully submit that Zhu does not disclose (B) an organopolysiloxane having at least two silicon-bonded hydrogen atoms per molecule. Rather, Zhu discloses an **organohydrogensilane** having the formula



where R³ is a hydrocarbyl group free of aliphatic unsaturation and R⁴ is a hydrocarbylene group having a formula selected from:



wherein x is from 1 to 6. That is, component (B) as described by Zhu differs significantly from component (B) of the present application.

Component (B) of the present invention is an organopolysiloxane, i.e., a silicone polymer having Si-O bonds. In contrast, component (B) of Zhu is an organohydrogensilane, i.e., a compound free from Si-O bonds. Therefore, the silicone resin composition of Zhu differs from the curable silicon composition of the present application. This significant difference between component (B) of Zhu and component (B) of the present invention affects reactivity and curing of the curable silicone composition of the present invention. Further, Zhu fails to teach that an organopolysiloxane having at least two silicon-

bonded hydrogen atoms per molecule can be used in place of an **organohydrogensilane** for component (B) of the present invention. That is, the Applicants respectfully submit that the Examiner has misstated (1) the scope and content of the prior art. Therefore, the Applicants suggest that the Examiner's rejection of claims 1-12 is deficient and violates the standards for establishing a *prima facie* case of obviousness set forth by *Graham*. That is, the prior art does not include each element claimed. For this reason alone, the Examiner has failed to establish *prima facie* obviousness over the combination of Zhu and Miyajima et al.

Additionally, in *KSR*, the Supreme Court emphasized that "the principles laid down in *Graham* reaffirmed the 'functional approach' of *Hotchkiss*, 11 How. 248." *KSR*, 127 S.Ct. at 1739, 82 USPQ2d at 1395 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (emphasis added)), and reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.*

Notwithstanding the fact that the Examiner has failed to find each and every element of the claimed invention, a skilled artisan would not reasonably expect curable silicone compositions, including (B) the organopolysiloxane having at least two silicon-bonded hydrogen atoms per molecule, of the present invention to be useful for "protecting semiconductor chips and wiring" and as "insulating layers for semiconductor chips and printed-circuit boards, or as shock-absorbing layers for semiconductor chips and printed-circuit boards" (paragraph [0082]) due to the unexpected results obtained in terms of efficient manufacturing of sealed semiconductor devices, prevention of voids in sealing materials,

precision thickness control of cured silicone bodies that seal the semiconductor devices, protection of bonding wires from disconnection and undesired contact, reduced warping of semiconductor chips and printed-circuit boards, and compression molding of the curable silicone composition at relatively low temperature required for reduced warping.

The Applicant respectfully submits that the differences between the present invention, as claimed in independent claim 1, and Zhu are not obvious to those of skill in the art. The differences are not obvious at least because the present invention, by disclosing the manufacture of the semiconductor device sealed in the cured silicone body by subjecting the curable silicone composition, which includes (B) the organopolysiloxane having at least two silicon-bonded hydrogen atoms per molecule, to compression molding achieves results that are not predictable to one of skill in the art. That is, there is no recognition or expectation within the art in terms of semiconductor devices free of voids in sealing material and having controlled thickness of the cured silicone body. Neither Zhu nor Miyajima et al. do anything to counteract the Applicants' position that the results obtained through the present invention are unpredictable.

The Applicants respectfully submit that the reasoned statements set forth above effectively traverse the Examiner's rejection of claims 1-12. As such, the Applicants respectfully submit that the rejections under 35 U.S.C. §103(a) over Zhu in view of Miyajima et al. are overcome, and therefore, must be withdrawn.

In view of the foregoing, the Applicants submit that independent claim 1, as well as claims 2-12 that depend from claim 1, are both novel and non-obvious over the prior art

including over the combination of Zhu and Miyajima et al. As such, the Applicants believe the application is now in condition for allowance, and allowance is respectfully requested. This Amendment is timely filed; thus, it is believed that no additional fees are due. However, if necessary, the Commissioner is authorized to charge Deposit Account 08-2789 in the name of Howard & Howard Attorneys, P.C. for any additional fees or to credit the account for any overpayment.

Respectfully submitted,

HOWARD & HOWARD ATTORNEYS

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Date

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